

### REMARKS

The Examiner rejected claims 1-15, 17-22, and 24-29 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Examiner contends that Applicants do not teach that a bonding temperature of less than about 23°C above the melting temperature of the first biodegradable binder fiber is advantageous for the present invention. Applicants respectfully disagree. The Examiner concedes that Table 2 shows an example where a nonwoven web is bonded at a temperature of 23°C above the melting temperature of the first biodegradable binder fiber. The Examiner, however, overlooks the paragraph following the table, which indicates that the sample bonded at a temperature of 23°C above the melting temperature of the first biodegradable binder fiber is disfavored because it results in "a hard, lumpy web due to being overbonded," thereby providing support for the claimed temperature range of less than about 23°C above the melting temperature of the first biodegradable binder fiber. Likewise, this same portion of Applicants' specification provides support for not overbinding the web.

The Examiner also rejected claims 17, 18, 20-22, 27, and 29 as lacking support in the specification for the claimed temperature ranges and claims 24 and 25 for lacking support for the claimed fiber lengths. Amended claim 27 has support in Table 2 of the specification, where the bonding temperature of Sample #3 is 2°C below the melting temperature of the first binder fiber. Amended claim 24 has support in Table 1 of the specification, which discloses a length of 1.5 inches (38 mm) for the second fiber. Amended claim 25 has support on page 2, lines 1-2 of the specification, which discloses

a fiber length of 1 to 3 inches (25-76 mm). Claims 17, 18, 20-22, and 29 have been cancelled.

The Examiner rejected claims 1-15, 17-22, and 24-29 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The foregoing amendments to independent claims 1 and 27 overcome this rejection by deleting the term "overbind."

The Examiner rejected claims 1-15, 17-22, and 24-29 under 35 U.S.C. § 103(a) as being unpatentable over Tsai et al. (5,698,322) in view of Takeda et al. (EP 0801172) and either Handbook of Technical Textiles (HTT) or Thermal Bonding of Nonwoven Fabrics (TBNF). The Examiner states that Tsai teaches a mixture of fibers in a nonwoven, but concedes that Tsai fails to identify the specific components of the mixture set forth in claim 1. The Examiner then looks to Takeda, contending that it teaches a combination of poly(lactic acid) (PLA) binder fibers and cellulose acetate fibers, and concludes that it would have been obvious for one of ordinary skill in the art to combine the mixture taught by Tsai with the cellulose acetate fibers taught by Takeda. Applicants respectfully disagree.

Tsai is directed to a degradable fiber that is easily prepared and readily processable. Takeda is directed to a water-disintegrable sheet suitable for use in wet wipes for cleaning domestic articles or cleansing human bodies. In contrast, Applicants' invention is directed to a biodegradable nonwoven web having a specified range of permeabilities and void volumes suitable for use in, for example, the surge layer of a

personal care article. Neither of the cited references teaches or suggests that the disclosed structures may be combined to obtain the claimed ranges of permeabilities and void volumes required by Applicants' claims, nor is there any motivation to do so. Indeed, there is no mention whatsoever of desirable permeabilities or void volumes in these references, nor is there any mention of using the disclosed structures in a surge layer of a personal care product or other applications dictated by these properties. A skilled artisan seeking a product with the claimed permeabilities and void volumes would have no motivation to combine a reference focusing on easy preparation and ready processability of fibers with a reference focusing on properties desirable for applications such as wet wipes. Without such motivation, the Examiner cannot successfully establish a *prima facie* case of obviousness.

Further, Takeda teaches away from creating a thoroughly bonded web by stating that thermal fusion bonding should be limited so that the dispersibility of the sheet in flush water will not be seriously impaired. See p. 3, ln. 58 – p. 4, ln. 1. Applicants' claimed binder fibers do not generally lose their adhesive properties when flushed with water, and it is unnecessary for them to do so to accomplish the stated objectives of the invention. Thus, it would not be obvious to one of ordinary skill in the art to arrive at the claimed biodegradable web by combining Tsai and Takeda – two references with substantially different objectives than the objectives sought to be achieved by Applicants' invention.

The Examiner summarily dismisses the claimed permeability, void volume, melting temperature, and bonding temperature as inherent properties of the claimed

web. The Examiner failed to explain, however, how these physical properties can be inherent when two nonwoven webs containing identical materials have two entirely different physical structures. Table 2 shows that samples #2 and #3 contain precisely the same fibers in the same ratios. Sample #2, however, was a hard, lumpy web, whereas Sample #3 was a soft, strong web. See Application p. 19, Ins. 5-6. Therefore, it does not necessarily follow that the claimed physical properties are inherent in the claimed combination of materials. The desired properties can be obtained only by satisfying all the elements of the claimed combination, which are non-obvious for the reasons stated above.

The Examiner cited *In re Boesch*, 617 F.2d 272 (CCPA 1980), for the proposition that discovering the optimum value of a result effective variable, such as bonding temperature, involves only routine skill in the art. The Examiner failed to note, however, the well-settled rule that “a prima facie case of obviousness may be rebutted ‘where the results of optimizing a variable, which was known to be result effective, (are) unexpectedly good’” and that “proof of unexpected properties may be in the form of direct or indirect comparative testing of the claimed compounds [and] the closest prior art.” *Id.* at 276 (internal citations omitted). The Examiner consumes an entire page in an attempt to support his position that the claimed temperature at which the web is bonded is obvious. He fails to explain, however, why current surge layers demonstrate properties that are inferior to those of the claimed invention, despite the “obviousness” of optimizing process variables. See Application p. 4, Ins. 7-9. Importantly, Applicants’ claimed nonwoven web exhibits unexpected properties and, therefore, one having

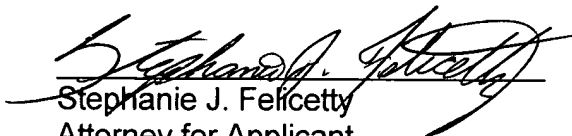
ordinary skill in the art could not obtain a product having the claimed properties by simply increasing the void volume of the materials until the claimed permeability is reached. The claimed invention exhibits the unexpected result of a permeability that is less than the expected permeability for a void volume in the claimed range. Indeed, Table 3 shows that the "current surge material" has a void volume of  $26.04 \text{ cm}^3/\text{g}$  and a permeability of  $2078 \text{ } \mu\text{m}^2$ . Sample #3, which falls within the ambit of claim 1, has a void volume of  $31.62 \text{ cm}^3/\text{g}$ , which is greater than that of the current surge material and therefore, it would be expected to have a permeability greater than that of the current surge material. Instead, the opposite is true. An increase in the void volume unexpectedly results in a *decrease* in permeability – a result contrary to the expected result of an increase in permeability upon an increase in void volume, but a result desirable for surge layer applications.

Finally, The Examiner provisionally rejected claims 1-15, 17-22, and 24-29 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 and 16-30 of copending Application No. 09/474,579. This copending application is commonly owned with the subject application. Therefore, a terminal disclaimer will be timely filed upon receipt of a Notice of Allowability.

For the reasons stated above, the cited references do not teach or suggest the presently claimed web. Applicants respectfully request withdrawal of the rejection and allowance of the claims.

If, for any reason, the Examiner feels that the above amendments and remarks do not put the claims in condition for allowance, the undersigned attorney can be reached at (312) 222-8105 to resolve any remaining issues.

Respectfully submitted,

  
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